



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/603,026

06/24/2003

Torsten Niederdrank

P03,0226

2603

26574

7590

07/30/2007

SCHIFF HARDIN, LLP  
PATENT DEPARTMENT  
6600 SEARS TOWER  
CHICAGO, IL 60606-6473

EXAMINER

PHILLIPS, FORREST M

ART UNIT

PAPER NUMBER

2837

MAIL DATE

DELIVERY MODE

07/30/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

TH

<b>Office Action Summary</b>	<b>Application No.</b> 10/603,026	<b>Applicant(s)</b> NIEDERDRANK ET AL.	
	<b>Examiner</b> Forrest M. Phillips	<b>Art Unit</b> 2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 14 May 2007.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-28,30 and 31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28,30 and 31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>5/17/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Response to Arguments***

Applicant's arguments with respect to claims 1-31 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Objections***

Claims 2-16, 18-28, 30-31 objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim.

Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Applicant has amended the independent claims to be closed ended but the dependent claims appear to add additional elements. Claims 12 and 15 do not appear to narrow the scope of claim 1.

Claim 17 is objected to because of the following informalities: use of "Comprising only" Examiner requests in keeping with standard American transitional phrase, the use of "comprising" for open ended claims and "consisting of" for closed ended. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2837

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,8-13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen et al (US20030133579).

With respect to claim 1 Aceti discloses an acoustic module (12 in figure 1) for a hearing aid device comprising: a unit for adapted insertion as a module (12) in the hearing aid device, said unit containing only a precombined acousto-electrical (18) transducer and electro-acoustical transducer (22) said acousto-electrical and electro-acoustical transducers having feedback associated with that is substantially fixed due to the transducers being precombined.

Examiner considers that while it is not taught that the feedback is substantially fixed, as much as if this is the case in the hearing aid unit of applicant this must also be the case in the Aceti reference. Examiner further considers that a unit would comprise a logical grouping of elements including the transducer and the associated feedback canceller in a logical conversion path. The electrical components of Aceti also on the carrier structure are outside this conversion path and as such not part of the "unit" in the sense of the electrical conversion path.

Aceti does not disclose a module signal processing unit being programmed dependent on said substantially fixed feedback to suppress said substantially fixed feedback.

Danielsen discloses (paragraph 8) the suppression of fixed feedback between an input transducer and the output transducer in a hearing aid by a module signal processing unit.

Art Unit: 2837

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Danielsen to have suppression of fixed feedback in a hearing aid with the transducers of Aceti as modified, to reduce howling.

With respect to claim 2 Aceti further discloses wherein said unit comprises a carrier structure (26 in figure 1) to which said acousto-electrical and said electro-acoustical transducers are connected.

With respect to claim 3 Aceti discloses the use of a housing (14) containing the module, transducers and associated electrical components included.

With respect to claim 8 Aceti further discloses further comprising an attachment arrangement (17 in figure 2) adapted to attach said unit in said hearing aid device.

With respect to claims 9-11 It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchinson, 69 USPQ 138.

With respect to claim 9 Aceti further discloses wherein said attachment arrangement is adapted to fixedly connect said unit in said hearing aid device (column 3 lines 1-6, and column 4 lines 30-35). Examiner considers that as the hearing aid is intended to be set to the needs of a given patient and disposed of as a unit the arrangement allows the unit to be adapted to be fixedly attached.

With respect to claim 10 Aceti discloses the invention as claimed except wherein the attachment arrangement is adapted to detachably connect said unit in said hearing aid device.

Art Unit: 2837

It would have been obvious to one of ordinary skill in the art at the time the invention was made to adapt the attachment arrangement to allow for the unit to be detachably connected to allow for an exchange of module if the user desired a different response than was selected by the audiologist (refer to column 4 lines 1-15).

Further more it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

With respect to claim 11 Aceti discloses the attachment arrangement, being part of the housing (refer to paragraph that extends from column 2 line 64 to third column line 5), being constructed from a flexible plastic material. Flexible plastic materials are capable of damping vibrations.

With respect to claims 12 and 15 Aceti as modified further discloses wherein said module signal processing unit suppresses feedback between said transducers (Aceti in view of paragraph 8 Danielsen).

With respect to claim 13 Aceti discloses wherein the hearing aid device comprises a hearing aid signal-processing unit (20 in figure 1) and wherein said unit is adapted for connection to said hearing aid signal-processing unit.

Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen as applied to claim 1 above, and further in view of DE 198 52 758.

With respect to claims 4-6 Asceti in view of Gao discloses the invention as claimed except wherein the acousto-electrical transducer comprises a directional microphone, Asceti in view of Danielsen also fails to disclose a plurality of microphones.

Art Unit: 2837

'758 disclose microphones forming a system mounted in such a way as to improve the directional characteristic.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '758 to use a plurality of directional microphones with the hearing aid module of Aceti as modified to provide the wearer with the ability to direct their hearing and focus on for example someone speaking to them.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen as applied to claim 1 above, and further in view of Klope (US20030070868).

With respect to claim 7 Aceti in view of Danielsen discloses the invention as claimed except wherein said unit comprises vibration-damping materials.

Klope discloses a vibration damping material (see figure 3 and paragraph 23).

At the time of the invention it would have been obvious to one of ordinary skill in the art to use the damping material of Klope for the module of Aceti as modified to prevent unwanted vibration (paragraph 1).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen as applied to claim 13 above, and further in view of DE3223809.

With respect to claim 14 Aceti in view of Danielsen discloses the invention as claimed except wherein said unit comprises plug contacts adapted to connect said unit to said hearing aid signal processing unit.

'809 disclose the use of a plug and socket arrangement to connect a signal-processing component of a hearing aid with remaining components.

Art Unit: 2837

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '809 to use a plug and socket arrangement for the hearing aid signal processing unit if Aceti as modified to provide a means to connect the processing unit to the module without the need for solder.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen as applied to claim 1 above, and further in view of DE 195 45760.

With respect to claim 1 Aceti as modified discloses the invention as claimed except wherein said unit comprises shielding against external electromagnetic fields.

'760 disclose a hearing aid with shielding against external electromagnetic fields.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '760 to shield a hearing aid from external electromagnetic fields with Aceti as modified due to the negative effects of external electromagnetic fields on hearing aid devices.

Claims 17-20, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen and DE3223809.

With respect to claims 17 and 18 Aceti discloses a hearing aid device comprising only:

A module (12 in figure 1) comprising a precombined acousto-electrical transducer (18 in figure 1) and electro-acoustical transducer (22 in figure 1); and a hearing aid signal processor (20 in figure 1); and the housing having a recess, including a mounting for receiving said module, in which said module is received (see figures) said module being mechanically and electrically connected to said hearing aid signal



Art Unit: 2837

processor and said hearing aid signal processor processing signals between said acousto-electrical and electro-acoustical transducers dependent upon hearing impairment of a user of the hearing aid device (column 4 lines 1-12).

Aceti does not disclose a module signal processor for suppressing feedback associated with said transducers.

Danielsen discloses suppression of fixed feedback between an input transducer and output transducer due to the fixed locations.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Danielsen to have suppression of fixed feedback in a hearing aid with the transducers of Aceti as modified, to reduce howling.

Aceti in view of Danielsen does not disclose wherein the hearing processor having a recess therein in which said module is received.

'809 discloses the use of plug and socket type connections for hearing aid components.

At the time of the invention it would have been obvious to one of ordinary skill in the art to apply the plug and socket type connections as taught by '809 with the hearing aid device of Aceti as modified to provide a mechanical and electrical fastening means that does not require solder.

With respect to claim 19 Aceti further discloses wherein said unit comprises a carrier structure (26 in figure 1) to which said acousto-electrical and said electro-acoustical transducers are connected.

With respect to claim 20 Aceti discloses the use of a housing (14 in figure 1) containing the module, transducers and associated electrical components included.

With respect to claims 25-28 DE'809 discloses an attachment arrangement namely a plug and socket type connection, which would as described in rejection of claim 17, attach said module in said recess. It would have been obvious to one of ordinary skill in the art that a plug and socket type connector could be adapted to be fixedly attached, removably attached or made in such a way as to damp vibrations in the connection.

With respect to claim 30 DE '809 specifically discloses the use of plug and socket connectors (abstract).

Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen and '809 as applied to claim 17 above, and further in view of DE 19852758.

With respect to claims 21-23 Aceti in view of Gao discloses the invention as claimed except wherein the acousto-electrical transducer comprises a directional microphone, Aceti in view of Danielsen also fails to disclose a plurality of microphones.

'758 discloses microphones forming a system mounted in such a way as to improve the directional characteristic.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '758 to use a plurality of directional microphones

Art Unit: 2837

with the hearing aid module of Aceti as modified to provide the wearer with the ability to direct their hearing and focus on for example someone speaking to them.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen and DE '809 as applied to claim 17 above, and further in view of Klope.

With respect to claim 24 Aceti in view of Danielsen and De'809 discloses the invention as claimed except wherein said module comprises vibration-damping materials.

Klope discloses the use of vibration damping materials in a connection of a hearing aid (see figure 3 and paragraph 23).

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of Klope to use a vibrations damping material with the module of Aceti as modified to prevent unwanted vibrations (paragraph 1).

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Aceti in view of Danielsen and '809 as applied to claim17 above, and further in view of '760.

With respect to claim 1 Aceti as modified discloses the invention as claimed except wherein said unit comprises shielding against external electromagnetic fields.

'760 discloses a hearing aid with shielding against external electromagnetic fields.

At the time of the invention it would have been obvious to one of ordinary skill in the art to combine the teachings of '760 to shield a hearing aid from external

Art Unit: 2837

electromagnetic fields with Aceti as modified due to the negative effects of external electromagnetic fields on hearing aid devices.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

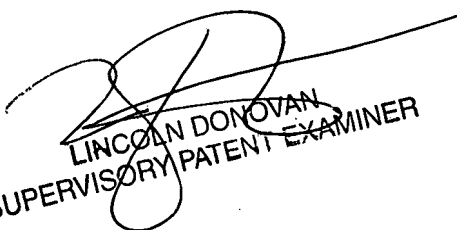
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Forrest M. Phillips whose telephone number is 5712729020. The examiner can normally be reached on Monday through Friday 8:30-5:00.

Art Unit: 2837

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on 5712721988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

FP

  
LINCOLN DONOVAN  
SUPERVISORY PATENT EXAMINER